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atgacgctgc cgatcatcaa tacccarccc gcactgaaat gatcggccag tttcccggcg 26640
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Gln Leu Val Ser Arg Ile Glu Arg Val Val Glu Arg His Ala Ser Leu
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Arg Gln Arg Phe Val Met Arg Asn Gly Thr Tyr Trp Ile Glu Gln Ala
         35                  40                  45

Pro Pro Gln Gln Arg Arg Tyr Cys Val Val Arg Thr Tyr Asp Glu Ala
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          50   55   60

Ser Thr Asp Ala Leu Leu Ala Pro Ser Arg Glu His Ile Gly Val Glu
 65   70   75   80

Ser Glu Arg Leu Phe Arg Ala Glu Val Val Glu Arg Ser Asp Gly Gln
                 85   90   95

Arg Tyr Leu Val Phe Arg Ile His His Ile Ile Ala Asp Leu Trp Ser
            100   105   110

Val Gly Leu Leu Ile Arg Asp Phe Ala Glu Asp Cys Met Asp Arg Ser
            115   120   125

Ser Ile Thr Leu Ala Ser Arg Pro Ile Ala Pro Leu Ile Asp Pro Glu
    130   135   140

Phe Trp Arg His Gln Met Ser Gln Asp Thr Pro Phe Ser Leu Pro Met
145   150   155   160

Ala Ser Leu Glu Gln His Thr Asp Arg Arg Met Val Leu Ser Ser Phe
                165   170   175

Val Ile Asp Gln Glu Ser Ser Ala Asp Leu Ala Arg Leu Ala Thr Ala
            180   185   190

Cys Ala Val Thr Pro Tyr Thr Val Met Leu Ala Ala Gln Val Leu Ala
            195   200   205

Leu Ser Arg Ile Gly Gln Ser Gly Arg Leu Ser Leu Ala Val Thr Phe
    210   215   220

His Gly Arg Asn Arg Gly Asn Lys Asp Ala Val Gly Tyr Phe Ala Asn
225   230   235   240

Thr Leu Ala Val Pro Phe Asp Val Ser Glu Cys Ser Val Gly Glu Phe
            245   250   255

Val Lys Arg Thr Ala Lys Arg Leu Asp Glu Ala Ser Lys Ala Ser Val
            260   265   270

Gly Ala Gly Tyr Pro Glu Leu Ala Glu Phe Met Thr Pro Leu Gly Trp
            275   280   285

Ala Ala Thr Ala Pro Thr Asn Ala Val Ile Tyr Gln Gln Asp Met Pro
    290   295   300

Gly Met Pro Arg Gly Leu Ala Ala Ala Leu Leu Gly Leu Gly Thr Val
305   310   315   320

Gln Leu Gly Glu Met Ala Leu Thr Ala Glu Gln Ala Pro Pro Ser Ile
            325   330   335

Gly Pro Phe Ala Thr Ala Leu Leu Leu Thr Arg His Asp Gly Lys Leu
            340   345   350

His Gly Arg Val Glu Val Asp Pro Ala Gln His Pro Gly Trp Leu Ala
            355   360   365

Glu Ala Leu Ala Arg Gln Phe Ala Val Ile Leu Arg Glu Met Val Arg
    370   375   380

Asp Pro Gln Ala Arg Leu Ser Ala Leu Pro Ala Cys Leu Leu His Gln

385   390   395   400

Pro Lys Tyr Pro Ser Gln Ala Arg Pro Ala Pro Ala Ser Glu Thr Leu
            405   410   415

Val Ala Thr Phe Leu Arg Gln Val Ala Ile Thr Pro Asp Lys Pro Ala
            420   425   430

Leu Arg Thr Pro Gln Ala Ser Ile Ser Tyr Ser Glu Leu Ala Ser Arg
            435   440   445

Val Ala Arg Leu Ser Ala Ala Leu Arg Val Arg Gly Phe Lys Pro Glu
    450   455   460

Gln Thr Leu Ala Ile Leu Leu Pro Arg Asp Ile Asn Leu Val Pro Ala
465   470   475   480

Leu Leu Ala Ile Met Ala Cys Gly Gly Ser Tyr Val Pro Leu Ser Asp
            485   490   495

Ala Asn Pro Ala Glu Leu Asn Arg Ser Ile Leu Thr Arg Ala Arg Cys
            500   505   510

Arg Ala Ile Leu Thr Asp Gln Glu Gly Leu Thr Arg Phe Ala His Leu
            515   520   525

Ala Pro Cys Trp Ser Leu Ser Asp Leu Leu Ser Met Pro Asp Ala Pro
    530   535   540

Leu Gln Asp Gln Ser Lys Leu Gln Ala Lys Ala Tyr Ile Leu Phe Thr
545   550   555   560

Ser Gly Ser Thr Gly Glu Pro Lys Gly Val Ala Ile Thr His Ala Asn
            565   570   575

Ala Ala Asn Leu Leu Arg Trp Ala Ala Leu Asp Cys Gly Pro Glu Tyr
            580   585   590

Leu Ala Gln Thr Leu Ala Ala Thr Pro Thr Thr Phe Asp Leu Ser Ile
            595   600   605

Phe Glu Met Phe Ala Pro Leu Met Val Gly Gly Cys Val Gln Pro Val
    610   615   620

Ser Ser Val Met Ala Leu Ile Asp Asn Pro Ala Leu Leu Lys Gly Thr
625   630   635   640

Thr Leu Ile Asn Thr Val Pro Ser Val Ala Asp Ala Leu Leu Gln His
            645   650   655

Asp Val Leu Val Pro Ser Leu Arg Met Leu Asn Leu Ala Gly Glu Pro
            660   665   670

Leu Asn Arg Asp Leu Tyr Leu Arg Leu Gln Ala Lys Leu Thr Ala Thr
            675   680   685

Arg Ile Val Asn Leu Tyr Gly Pro Thr Glu Thr Thr Thr Tyr Ser Thr
    690   695   700

Ala Leu Val Ile Glu Pro Ala Gln Gln Glu Ile Thr Ile Gly Phe Pro
705   710   715   720

Leu Tyr Gly Thr Trp Val Asp Val Val Asp Gln Asn Met Gln Ser Val

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                    725                      730                      735
Gly Ile Gly Val Pro Gly Glu Leu Ile Ile His Gly His Gly Val Ala
            740                  745                  750
Gln Gly Tyr Val Ser Asp Pro Val Arg Ser Ala Ala Ser Phe Leu Pro
        755                  760                  765
Ala Ser Asp Gly Leu Arg Cys Tyr Arg Thr Gly Asp Arg Val Arg Trp
    770                  775                  780
Leu Pro Asp Gly Arg Leu Asp Phe Ile Gly Arg Glu Asp Asp Gln Val
785                  790                  795                  800
Lys Val Arg Gly Phe Arg Val Glu Leu Gly Pro Val Gln Ala Ala Leu
            805                  810                  815
His Ala Ile Glu Thr Ile His Glu Ser Ala Val Val Val Pro Lys
            820                  825                  830
Gly Gln Gln Arg Ser Ile Val Ala Phe Ile Val Leu Lys Ala Pro Ser
        835                  840                  845
Glu Asp Glu Ala Val Gln Arg Asn Asn Ile Lys Gln His Leu Leu Gly
    850                  855                  860
Val Leu Pro Tyr Tyr Ala Leu Pro Asp Lys Phe Ile Phe Val Lys Ala
865                  870                  875                  880
Leu Pro Arg Asn Thr His Gly Lys Ile Asp Arg Thr Leu Leu Leu Gln
            885                  890                  895
His Glu Pro Gln Thr Glu Gln Glu Ser Ala Met Arg Asp Ala Thr Asp
            900                  905                  910
Val Glu His Arg Ile Ala Asn Cys Trp Gln Thr Ile Ile Gly His Pro
        915                  920                  925
Val Gln Leu His Glu Asn Phe Leu Asp Ile Gly Gly His Ser Leu Ser
    930                  935                  940
Leu Thr His Leu Thr Gly Leu Leu Arg Lys Glu Phe Asn Ile His Ile
945                  950                  955                  960
Ser Leu His Asp Leu Trp Ile Arg Pro Thr Ile Glu Gln Gln Ala Asp
            965                  970                  975
Phe Ile His Lys Leu Gln Asn Ser Val Leu Thr Lys Pro Ala Ala Ala
            980                  985                  990
Pro Ile Pro Arg Leu Asp Arg Lys Ile Ser His His
        995                  1000
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                20   25   30

Ala Tyr Thr Leu Ala Met Lys Val Ser Ile Ala Gly Lys Leu Asn Thr
                35   40   45

Leu Arg Leu Gln Arg Ala Val Asn Gln Val Val Ala Ser Gln Glu Ile
        50   55   60

Leu Arg Thr Ser Phe Ala Tyr Lys Asn Gln Lys Leu Ser Gln Val Ile
65   70   75   80

Ser Pro Ser Ala Thr Leu Pro Ile Arg Ser Ala His Cys Ile Asp Asp
                85   90   95

Val Pro Gly Leu Gln Arg Leu Ile Asn Met Glu Ala Gln Arg Gly Trp
                100   105   110

Ser Leu Ser Ser Ala Pro Leu Tyr Arg Leu Leu Leu Ile Lys Thr Gly
        115   120   125

Asp Gln Gln His Glu Leu Val Ile Cys Thr His His Ile Val Cys Asp
        130   135   140

Gly Ile Ser Leu Gln Leu Leu Leu Gln Lys Ile Val Ser Ala Tyr Gln
145   150   155   160

Gly Gln Ser Asp Gly Arg Val Leu Thr Ser Pro Asp Glu Glu Thr Leu
                165   170   175

Gln Phe Val Asp Tyr Ala Ala Trp Ser Arg Gln His Glu Tyr Ala Gly
                180   185   190

Leu Glu Tyr Trp Arg Gln Gln Leu Ala Asp Ala Pro Thr Ile Leu Asp
        195   200   205

Ile Ser Thr Lys Thr Gly Arg Ser Glu Gln Gln Thr Phe Leu Gly Ala
210   215   220

Arg Ile Pro Val Glu Phe Ser His His Gln Trp Gln Ala Leu Arg Gln
225   230   235   240

Ile Phe Arg Pro Gln Gly Ile Ser Cys Ala Ala Val Phe Leu Ala Ala
                245   250   255

Tyr Cys Val Val Leu His Arg Leu Ala Glu Gln Asp Asp Ile Leu Ile
                260   265   270

Gly Leu Pro Thr Ser Asn Arg Leu Arg Pro Glu Leu Ala Gln Val Ile
        275   280   285

Gly Tyr Leu Ser Asn Leu Cys Val Phe Arg Ser Gln Tyr Ala His Asp
290   295   300

Gln Ser Val Thr Asp Phe Leu Gln Gln Val Gln Leu Thr Leu Pro Asn
305   310   315   320

Leu Ile Glu His Gly Glu Thr Pro Phe Gln Gln Val Leu Glu Ser Val
                325   330   335

Glu His Thr Arg Gln Ala Gly Val Thr Pro Leu Cys Gln Val Leu Phe
                340   345   350

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Gly Tyr Glu Gln Asp Val Arg Arg Thr Leu Asp Ile Gly Asp Leu Gln
        355   360   365

Leu Thr Val Ser Asp Val Asp Thr Gly Ala Ala Arg Leu Asp Leu Ser
    370   375   380

Leu Phe Leu Phe Glu Asp Glu Leu Asn Val Cys Gly Phe Leu Glu Tyr
385   390   395   400

Ala Thr Asp Arg Ile Asp Ala Ala Ser Ala Gln Asn Met Val Arg Met
            405   410   415

Leu Ser Ser Val Leu Arg Glu Phe Val Ala Ala Pro Gln Ala Pro Leu
        420   425   430

Ser Glu Val Gln Leu Gly Ala Ala Asp Ser Gln Ala Gln Thr Pro Ala
        435   440   445

Ile Ala Pro Ala Phe Pro Ser Val Pro Ala Arg Leu Phe Ala Leu Ala
    450   455   460

Asp Ser His Pro Asn Ala Thr Ala Leu Arg Asp Glu Gln Gly Glu Leu
465   470   475   480

Thr Tyr Ala Gln Val Cys Gln Gln Ile Leu Gln Ala Ala Ala Thr Leu
            485   490   495

Arg Ala Gln Gly Ala Lys Pro Gly Thr Leu Ile Ala Val Ile Gly Glu
        500   505   510

Arg Gly Asn Pro Trp Leu Ile Ala Met Leu Ala Ile Trp Gln Val Gly
        515   520   525

Gly Ile Tyr Val Pro Leu Ser Lys Asp Leu Pro Glu Gln Arg Leu Gln
    530   535   540

Gly Ile Leu Ala Glu Leu Glu Gly Ala Ile Leu Ile Thr Asp Asp Thr
545   550   555   560

Thr Pro Glu Arg Phe Arg Gln Arg Val Thr Leu Pro Met His Ala Leu
            565   570   575

Trp Ala Asp Gly Ala Thr His His Glu Arg Gln Thr Thr Asp Ala Ser
        580   585   590

Arg Leu Ser Gly Tyr Met Met Tyr Thr Ser Gly Ser Thr Gly Lys Pro
        595   600   605

Lys Gly Val His Val Ser Gln Ala Asn Leu Val Ala Thr Leu Ser Ala
    610   615   620

Phe Gly Gln Leu Leu Gln Val Lys Pro Ser Asp Arg Met Leu Ala Leu
625   630   635   640

Thr Thr Phe Ser Phe Asp Ile Ser Leu Leu Glu Leu Leu Leu Pro Leu
            645   650   655

Val Gln Gly Ala Ser Val Gln Ile Ala Val Ala Gln Ala Gln Arg Asp
        660   665   670

Ala Glu Lys Leu Ala Gly Tyr Leu Ala Asp Pro Arg Ile Thr Leu Val
        675   680   685

Gln Ala Thr Pro Val Thr Trp Arg Leu Leu Leu Ser Thr Gly Trp Gln
690   695   700

Pro Arg Glu Ser Leu Thr Leu Leu Cys Gly Gly Glu Ala Leu Pro Gln
705   710   715   720

Asp Leu Ala Asp Arg Leu Cys Leu Pro Gly Met Thr Leu Trp Asn Leu
                725   730   735

Tyr Gly Pro Thr Glu Thr Thr Ile Trp Ser Thr Ala Cys Arg Leu Gln
            740   745   750

Pro Gly Ala Pro Val Gln Leu Gly His Pro Ile Ala Gly Thr Gln Ile
            755   760   765

Ala Leu Val Asp Arg Asn Leu Arg Ser Val Pro Arg Gly Val Ile Gly
    770   775   780

Glu Leu Leu Ile Cys Gly Pro Gly Val Ser Gln Gly Tyr Tyr Arg Asn
785   790   795   800

Pro Val Glu Thr Ala Lys Arg Phe Val Pro Asp Pro His Gly Ser Gly
            805   810   815

Lys Arg Ala Tyr Leu Thr Gly Asp Arg Met Arg Met Gln Gln Asp Gly
            820   825   830

Ser Leu Ala Tyr Ile Gly Arg Arg Asp Asp Gln Ile Lys Leu Arg Gly
            835   840   845

His Arg Ile Glu Leu Gly Glu Ile Glu Thr Ala Leu Arg Lys Leu Pro
    850   855   860

Gly Val Arg Asp Ala Ala Ala Gln Leu His Asp Gln Asp Pro Ser Arg
865   870   875   880

Gly Ile Gln Ala Phe Val Gln Leu Cys Ala Thr Val Asp Glu Ser Leu
            885   890   895

Ile Asp Ile Gly Gln Trp Leu Glu Thr Leu Arg Gln Thr Leu Pro Glu
            900   905   910

Ala Trp Leu Pro Thr Glu Tyr Tyr Arg Ile Asp Gly Ile Pro Leu Thr
    915   920   925

Tyr Asn Gly Lys Arg Asp Arg Lys Arg Leu Leu His Gln Ala Val Arg
    930   935   940

Leu Gln Thr Leu Ser Leu Arg Val Ala Pro Ser Ser Asp Thr Glu Thr
945   950   955   960

Arg Val Gln Gln Ile Trp Cys Glu Leu Leu Gly Leu Glu Asp Ile Gly
            965   970   975

Val Thr Asp Asp Phe Phe Gln Leu Gly Gly His Ser Ile Leu Val Ala
            980   985   990

Arg Met Val Glu Arg Ile Glu Thr Ala Phe Gly Arg Arg Val Pro Ile
            995   1000   1005

Ala Asp Ile Tyr Phe Ser Pro Thr Ile Ala Arg Val Ala Ala Thr Leu
    1010   1015   1020

Asp Ser Met Thr Phe Glu Gln Gly Leu Ala Ala His Ser Val Lys Gly
1025   1030   1035   1040

Asp Trp Glu Phe Thr Ala Ile Ser Leu Gln His Asn Ala Asp Ser Thr
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Ala Ala Ala Gln Glu Arg
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Lys Arg Leu Trp Leu Leu Ala Gln Leu Ala Gly Thr Ala Thr Leu Pro
        35   40   45

Val Thr Val Arg Tyr Ala Phe Thr Gly Thr Val Asp Leu Ala Val Val
    50   55   60

Gln Gln Asn Leu Ser Ala Trp Ile Ala His Ser Glu Ser Leu Arg Ser
 65   70   75   80

Leu Phe Val Glu Val Leu Glu Arg Pro Val Arg Leu Leu Met Pro Thr
                85   90   95

Gly Leu Val Lys Leu Glu Tyr Phe Asp Arg Pro Pro Ser Asp Ala Asp
            100   105   110

Met Ala Glu Leu Ile Gly Ala Ala Phe Glu Leu Asp Lys Gly Pro Leu
        115   120   125

Leu Arg Ala Phe Ile Thr Arg Thr Ala Ala Gln Gln His Glu Leu His
    130   135   140

Leu Val Gly His Pro Ile Val Val Asp Glu Pro Ser Leu Gln Arg Ile
145   150   155   160

Ala Gln Thr Leu Phe Gln Thr Glu Pro Asp His Gln Tyr Pro Ala Val
            165   170   175

Gly Ala Ile Ala Glu Val Phe Gln Arg Glu Gln Thr Leu Ala Gln Asp
            180   185   190

Ala Gln Ile Thr Glu Gln Trp Gln Gln Trp Gly Ile Gly Leu Gln Ala
        195   200   205

Pro Ala Ala Thr Glu Ile Pro Thr Glu Asn Pro Arg Pro Ala Ile Lys
    210   215   220

Gly Ser Asp Arg Gln Val His Glu Ala Leu Thr Ala Trp Gly Asp Gln
225   230   235   240

Pro Val Ala Glu Ala Glu Ile Val Ser Ser Trp Leu Thr Val Leu Met
            245   250   255

Arg Trp Gln Gly Ser Gln Ser Ala Leu Cys Ala Ile Lys Val Arg Asp
              260   265   270

Lys Ala His Ala Asn Leu Ile Gly Pro Leu Gln Thr Tyr Leu Pro Val
              275   280   285

Arg Val Asp Met Pro Asp Gly Ser Thr Leu Ala Gln Leu Arg Leu Gln
290   295   300

Val Glu Glu Gln Leu Asn Gly Asn Asp His Pro Ser Phe Ser Thr Leu
305   310   315   320

Leu Glu Val Cys Pro Pro Lys Arg Asp Leu Ser Arg Thr Pro Tyr Phe
              325   330   335

Gln Thr Gly Leu Gln Phe Ile Ala His Asp Val Glu Gln Arg Asp Phe
              340   345   350

His Ala Gly Asn Leu Thr Arg Leu Pro Thr Lys Gln Pro Ser Ser Asp
              355   360   365

Leu Asp Leu Phe Ile Ser Cys Trp Val Ser Asp Gly Thr Leu Gly Leu
370   375   380

Thr Leu Asp Tyr Asp Cys Ala Val Leu Asn Ser Ser Gln Val Glu Val
385   390   395   400

Leu Ala Gln Ala Leu Ile Ser Val Leu Ser Ala Pro Gly Glu Gln Pro
              405   410   415

Ile Ala Thr Val Ala Leu Met Gly Gln Gln Met Gln Gln Thr Val Leu
              420   425   430

Ala Gln Ala His Gly Pro Arg Thr Thr Pro Pro Gln Leu Thr Leu Thr
              435   440   445

Glu Trp Val Ala Ala Ser Thr Glu Lys Ser Pro Leu Ala Val Ala Val
              450   455   460

Ile Asp His Gly Gln Gln Leu Ser Tyr Ala Glu Leu Trp Ala Arg Ala
465   470   475   480

Ala Leu Val Ala Ala Asn Ile Ser Gln His Val Ala Lys Pro Arg Ser
              485   490   495

Ile Ile Ala Val Ala Leu Pro Arg Ser Ala Glu Phe Ile Ala Ala Leu
              500   505   510

Leu Gly Val Val Arg Ala Gly His Ala Phe Leu Pro Ile Asp Pro Arg
              515   520   525

Leu Pro Thr Asp Arg Ile Gln Phe Leu Ile Glu Asn Ser Gly Cys Glu
530   535   540

Leu Val Ile Thr Ser Asp Gln Gln Ser Val Glu Gly Trp Pro Gln Val
545   550   555   560

Ala Arg Ile Arg Met Glu Ala Leu Asp Pro Asp Ile Arg Trp Val Ala
              565   570   575

Pro Thr Gly Leu Ser His Ser Asp Ala Ala Tyr Leu Ile Tyr Thr Ser
              580   585   590

Gly Ser Thr Gly Val Pro Lys Gly Val Val Val Glu His Arg Gln Val
        595   600   605

Val Asn Asn Ile Leu Trp Arg Gln Arg Thr Trp Pro Leu Thr Ala Gln
    610   615   620

Asp Asn Val Leu His Asn His Ser Phe Ser Phe Asp Pro Ser Val Trp
625   630   635   640

Ala Leu Phe Trp Pro Leu Leu Thr Gly Gly Thr Ile Val Leu Ala Asp
            645   650   655

Val Arg Thr Met Glu Asp Ser Thr Ala Leu Leu Asp Leu Met Ile Arg
            660   665   670

His Asp Val Ser Val Leu Gly Gly Val Pro Ser Leu Leu Gly Thr Leu
            675   680   685

Ile Asp His Pro Phe Ala Asn Asp Cys Arg Ala Val Lys Leu Val Leu
    690   695   700

Ser Gly Gly Glu Val Leu Asn Pro Glu Leu Ala His Lys Ile Gln Lys
705   710   715   720

Val Trp Gln Ala Asp Val Ala Asn Leu Tyr Gly Pro Thr Glu Ala Thr
            725   730   735

Ile Asp Ala Leu Tyr Phe Ser Ile Asp Lys Asn Ala Ala Gly Ala Ile
            740   745   750

Pro Ile Gly Tyr Pro Ile Asp Asn Thr Asp Ala Tyr Ile Val Asp Leu
            755   760   765

Asn Leu Asn Pro Val Pro Pro Gly Val Pro Gly Glu Ile Met Leu Ala
    770   775   780

Gly Gln Asn Leu Ala Arg Gly Tyr Leu Gly Lys Pro Ala Gln Thr Ala
785   790   795   800

Gln Arg Phe Leu Pro Asn Pro Phe Gly Asn Gly Arg Val Tyr Ala Thr
            805   810   815

Gly Asp Leu Gly Arg Arg Trp Ser Ser Gly Ala Ile Ser Tyr Leu Gly
            820   825   830

Arg Arg Asp Gln Gln Val Lys Ile Arg Gly His Arg Ile Glu Leu Asn
            835   840   845

Glu Val Ala His Leu Leu Cys Gln Ala Leu Glu Leu Lys Glu Ala Ile
    850   855   860

Val Phe Ala Gln His Ala Gly Thr Glu Gln Ala Arg Leu Val Ala Ala
865   870   875   880

Ile Glu Gln Gln Pro Gly Leu His Ser Glu Gly Ile Lys Gln Glu Leu
            885   890   895

Leu Arg His Leu Pro Ala Tyr Leu Ile Pro Ser Gln Leu Leu Leu Leu
            900   905   910

Asp Glu Leu Pro Arg Thr Ala Thr Gly Lys Val Asp Met Leu Lys Leu
            915   920   925

Asp Gln Leu Ala Ala Pro Gln Leu Asn Asp Ala Gly Gly Thr Glu Cys
    930   935   940

Arg Ala Pro Arg Thr Asp Leu Glu Gln Ser Val Met Thr Asp Phe Ala
945   950   955   960

Gln Val Leu Gly Leu Thr Ala Val Thr Pro Asp Thr Asp Phe Phe Glu
             965   970   975

Gln Gly Gly Asn Ser Ile Leu Leu Thr Arg Leu Ala Gly Thr Leu Ser
         980   985   990

Ala Lys Tyr Gln Val Gln Ile Pro Leu His Glu Phe Phe Leu Thr Pro
         995   1000   1005

Thr Pro Ala Ala Val Ala Gln Ala Ile Glu Ile Tyr Arg Arg Glu Gly
    1010   1015   1020

Leu Thr Ala Leu Leu Ser Arg Gln His Ala Gln Thr Leu Glu Gln Asp
1025   1030   1035   1040

Ile Tyr Leu Glu Glu His Ile Arg Pro Asp Gly Leu Pro His Ala Asn
             1045   1050   1055

Trp Tyr Gln Pro Ser Val Val Phe Leu Thr Gly Ala Thr Gly Tyr Leu
             1060   1065   1070

Gly Leu Tyr Leu Ile Glu Gln Leu Leu Lys Arg Thr Thr Ser Arg Val
         1075   1080   1085

Ile Cys Leu Cys Arg Ala Lys Asp Ala Glu His Ala Lys Ala Arg Ile
    1090   1095   1100

Leu Glu Gly Leu Lys Thr Tyr Arg Ile Asp Val Gly Ser Glu Leu His
1105   1110   1115   1120

Arg Val Glu Tyr Leu Thr Gly Asp Leu Ala Leu Pro His Leu Gly Leu
             1125   1130   1135

Ser Glu His Gln Trp Gln Thr Leu Ala Glu Glu Val Asp Val Ile Tyr
             1140   1145   1150

His Asn Gly Ala Leu Val Asn Phe Val Tyr Pro Tyr Ser Ala Leu Lys
         1155   1160   1165

Ala Thr Asn Val Gly Gly Thr Gln Ala Ile Leu Glu Leu Ala Cys Thr
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Ala Arg Leu Lys Ser Val Gln Tyr Val Ser Thr Val Asp Thr Leu Leu
1185   1190   1195   1200

Ala Thr His Val Pro Arg Pro Phe Ile Glu Asp Asp Ala Pro Leu Arg
             1205   1210   1215

Ser Ala Val Gly Val Pro Val Gly Tyr Thr Gly Ser Lys Trp Val Ala
             1220   1225   1230

Glu Gly Val Ala Asn Leu Gly Leu Arg Arg Gly Ile Pro Val Ser Ile
         1235   1240   1245

Phe Arg Pro Gly Leu Ile Leu Gly His Thr Glu Thr Gly Ala Ser Gln
    1250   1255   1260

Ser Ile Asp Tyr Leu Leu Val Ala Leu Arg Gly Phe Leu Pro Met Gly
1265   1270   1275   1280

Ile Val Pro Asp Tyr Pro Arg Ile Phe Asp Ile Val Pro Val Asp Tyr
                    1285   1290   1295

Val Ala Ala Ala Ile Val His Ile Ser Met Gln Pro Gln Gly Arg Asp
                1300   1305   1310

Lys Phe Phe His Leu Phe Asn Pro Ala Pro Val Thr Ile Arg Gln Phe
            1315   1320   1325

Cys Asp Trp Ile Arg Glu Phe Gly Tyr Glu Phe Lys Leu Val Asp Phe
    1330   1335   1340

Glu His Gly Arg Gln Gln Ala Leu Ser Val Pro Pro Gly His Leu Leu
1345   1350   1355   1360

Tyr Pro Leu Val Pro Leu Ile Arg Asp Ala Asp Pro Leu Pro His Arg
                1365   1370   1375

Ala Leu Asp Pro Asp Tyr Ile His Glu Val Asn Pro Ala Leu Glu Cys
                1380   1385   1390

Lys Gln Thr Leu Glu Leu Leu Ala Ser Ser Asp Ile Thr Leu Ser Lys
            1395   1400   1405

Thr Thr Lys Ala Tyr Ala His Thr Ile Leu Arg Tyr Leu Ile Asp Thr
    1410   1415   1420

Gly Phe Met Ala Lys Pro Gly Val
1425   1430

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<213> Pseudomonas fluorescens A2-2

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  1   5   10   15

Cys Pro Glu Asn Leu Pro Ala Thr Glu Arg Ala Leu Ala Pro Ser Ala
                20   25   30

Ala Met Ala Arg Gln Val Leu Glu Tyr Leu Glu Ala Cys Pro Gln Ala
            35   40   45

Lys Asn Leu Glu Gln Tyr Leu Gly Thr Leu Arg Glu Val Leu Ala His
    50   55   60

Leu Pro Cys Ala Ser Thr Gly Leu Met Thr Asp Asp Pro Arg Glu Asn
 65   70   75   80

Gln Glu Asn Arg Asp Asn Asp Phe Ala Phe Gly Ile Glu Arg His Gln
                85   90   95

Gly Asp Thr Val Thr Leu Met Val Lys Ala Thr Leu Asp Ala Ala Ile
                100   105   110

Gln Thr Gly Glu Leu Val Gln Arg Ser Gly Thr Ser Leu Asp His Ser

```
            115                    120                    125

Glu Trp Ser Asp Met Met Ser Val Ala Gln Val Ile Leu Gln Thr Ile
    130                 135                 140

Ala Asp Pro Arg Val Met Pro Glu Ser Arg Leu Thr Phe Gln Ala Pro
145                 150                 155                 160

Lys Ser Lys Val Glu Glu Asp Asp Gln Asp Pro Leu Arg Arg Trp Val
                165                 170                 175

Arg Gly His Leu Leu Phe Met Val Leu Cys Gln Gly Met Ser Leu Cys
                180                 185                 190

Thr Asn Leu Leu Ile Ser Ala Ala His Asp Lys Asp Leu Glu Leu Ala
                195                 200                 205

Cys Ala Gln Ala Asn Arg Leu Ile Gln Leu Met Asn Ile Ser Arg Ile
    210                 215                 220

Thr Leu Glu Phe Ala Thr Asp Leu Asn Ser Gln Gln Tyr Val Ser Gln
225                 230                 235                 240

Ile Arg Pro Thr Leu Met Pro Ala Ile Ala Pro Pro Lys Met Ser Gly
                245                 250                 255

Ile Asn Trp Arg Asp His Val Val Met Ile Arg Trp Met Arg Gln Ser
                260                 265                 270

Thr Asp Ala Trp Asn Phe Ile Glu Gln Ala Tyr Pro Gln Leu Ala Glu
                275                 280                 285

Arg Met Arg Thr Thr Leu Ala Gln Val Tyr Ser Ala His Arg Gly Val
    290                 295                 300

Cys Glu Lys Phe Val Gly Glu Glu Asn Thr Ser Leu Leu Ala Lys Glu
305                 310                 315                 320

Asn Ala Thr Asn Thr Ala Gly Gln Val Leu Glu Asn Leu Lys Lys Ser
                325                 330                 335

Arg Leu Lys Tyr Leu Lys Thr Lys Gly Cys Ala Gly Ala Gly
                340                 345                 350
```

<210> 6
<211> 61
<212> PRT
<213> Pseudomonas fluorescens A2-2

<400> 6
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Met Pro Thr Phe Leu Gly Asp Asp Asp Ala Val Pro Cys Val Val Val
  1               5                   10                  15

Val Asn Ala Asp Lys His Tyr Ser Ile Trp Pro Ser Ala Arg Asp Ile
                20                  25                  30

Pro Ser Gly Trp Ser Glu Glu Gly Phe Lys Gly Ser Arg Ser Asp Cys
            35                  40                  45

Leu Glu His Ile Ala Gln Ile Trp Pro Glu Pro Thr Ala
    50                  55                  60
```

<210> 7
<211> 355
<212> PRT
<213> Pseudomonas fluorescens A2-2

<400> 7
Met Thr Ser Thr His Arg Thr Thr Asp Gln Val Lys Pro Ala Val Leu
  1   5   10   15

Asp Met Pro Gly Leu Ser Gly Ile Leu Phe Gly His Ala Ala Phe Gln
             20   25   30

Tyr Leu Arg Ala Ser Cys Glu Leu Asp Leu Phe Glu His Val Arg Asp
         35   40   45

Leu Arg Glu Ala Thr Lys Glu Ser Ile Ser Ser Arg Leu Lys Leu Gln
     50   55   60

Glu Arg Ala Ala Asp Ile Leu Leu Leu Gly Ala Thr Ser Leu Gly Met
 65   70   75   80

Leu Val Lys Glu Asn Gly Ile Tyr Arg Asn Ala Asp Val Val Glu Asp
             85   90   95

Leu Met Ala Thr Asp Asp Trp Gln Arg Phe Lys Asp Thr Val Ala Phe
            100   105   110

Glu Asn Tyr Ile Val Tyr Glu Gly Gln Leu Asp Phe Thr Glu Ser Leu
            115   120   125

Gln Lys Asn Thr Asn Val Gly Leu Gln Arg Phe Pro Gly Glu Gly Arg
        130   135   140

Asp Leu Tyr His Arg Leu His Gln Asn Pro Lys Leu Glu Asn Val Phe
145   150   155   160

Tyr Arg Tyr Met Arg Ser Trp Ser Glu Leu Ala Asn Gln Asp Leu Val
                165   170   175

Lys His Leu Asp Leu Ser Arg Val Lys Lys Leu Leu Asp Ala Gly Gly
            180   185   190

Gly Asp Ala Val Asn Ala Ile Ala Leu Ala Lys His Asn Glu Gln Leu
        195   200   205

Asn Val Thr Val Leu Asp Ile Asp Asn Ser Ile Pro Val Thr Gln Gly
    210   215   220

Lys Ile Asn Asp Ser Gly Leu Ser His Arg Val Lys Ala Gln Ala Leu
225   230   235   240

Asp Ile Leu His Gln Ser Phe Pro Glu Gly Tyr Asp Cys Ile Leu Phe
                245   250   255

Ala His Gln Leu Val Ile Trp Thr Leu Glu Glu Asn Thr His Met Leu
            260   265   270

Arg Lys Ala Tyr Asp Ala Leu Pro Glu Gly Gly Arg Val Val Ile Phe
        275   280   285

Asn Ser Met Ser Asn Asp Glu Gly Asp Gly Pro Val Met Ala Ala Leu
    290   295   300

```
Asp Ser Val Tyr Phe Ala Cys Leu Pro Ala Glu Gly Gly Met Ile Tyr
305                 310             315                 320

Ser Trp Lys Gln Tyr Glu Val Cys Leu Ala Glu Ala Gly Phe Lys Asn
                325             330                 335

Pro Val Arg Thr Ala Ile Pro Gly Trp Thr Pro His Gly Ile Ile Val
                340             345             350

Ala Tyr Lys
        355
```

<210> 8
<211> 347
<212> PRT
<213> Pseudomonas fluorescens A2-2

<400> 8
```
Met Ala Arg Ser Pro Glu Thr Asn Ser Ala Met Pro Gln Gln Ile Arg
  1             5                 10                  15

Gln Leu Leu Tyr Ser Gln Leu Ile Ser Gln Ser Ile Gln Thr Phe Cys
                20              25                  30

Glu Leu Arg Leu Pro Asp Val Leu Gln Ala Ala Gly Gln Pro Thr Ser
            35              40                  45

Ile Glu Arg Leu Ala Glu Gln Thr His Thr His Ile Ser Ala Leu Ser
        50              55                  60

Arg Leu Leu Lys Ala Leu Lys Pro Phe Gly Leu Val Lys Glu Thr Asp
 65             70              75                  80

Glu Gly Phe Ser Leu Thr Asp Leu Gly Ala Ser Leu Thr His Asp Ala
                85              90                  95

Phe Ala Ser Ala Gln Pro Ser Ala Leu Leu Ile Asn Gly Glu Met Gly
            100             105                 110

Gln Ala Trp Arg Gly Met Ala Gln Thr Ile Arg Thr Gly Glu Ser Ser
        115             120                 125

Phe Lys Met Tyr Tyr Gly Ile Ser Leu Phe Glu Tyr Phe Glu Gln His
    130             135             140

Pro Glu Arg Arg Ala Ile Phe Asp Arg Ser Gln Asp Met Gly Leu Asp
145             150             155                 160

Leu Glu Ile Pro Glu Ile Leu Glu Asn Ile Asn Leu Asn Asp Gly Glu
                165             170                 175

Asn Ile Val Asp Val Gly Gly Gly Ser Gly His Leu Leu Met His Met
            180             185                 190

Leu Asp Lys Trp Pro Glu Ser Thr Gly Ile Leu Phe Asp Leu Pro Val
        195             200                 205

Ala Ala Lys Ile Ala Gln Gln His Leu His Lys Ser Gly Lys Ala Gly
    210             215             220

Cys Phe Glu Ile Val Ala Gly Asp Phe Phe Lys Ser Leu Pro Asp Ser
```

225   230   235   240

Gly Ser Val Tyr Leu Leu Ser His Val Leu His Asp Trp Gly Asp Glu
            245   250   255

Asp Cys Lys Ala Ile Leu Ala Thr Cys Arg Arg Ser Met Pro Asp Asn
            260   265   270

Ala Leu Leu Val Val Val Asp Leu Val Ile Asp Gln Ser Glu Ser Ala
            275   280   285

Gln Pro Asn Pro Thr Gly Ala Met Met Asp Leu Tyr Met Leu Ser Leu
    290   295   300

Phe Gly Ile Ala Gly Gly Lys Glu Arg Asn Glu Asp Glu Phe Arg Thr
305   310   315   320

Leu Ile Glu Asn Ser Gly Phe Asn Val Lys Gln Val Lys Arg Leu Pro
            325   330   335

Ser Gly Asn Gly Ile Ile Phe Ala Tyr Pro Lys
            340   345

<210> 9
<211> 180
<212> PRT
<213> Pseudomonas fluorescens A2-2

<400> 9
Met Ser Thr Leu Val Tyr Tyr Val Ala Ala Thr Leu Asp Gly Tyr Ile
  1   5   10   15

Ala Thr Gln Gln His Lys Leu Asp Trp Leu Glu Asn Phe Ala Leu Gly
            20   25   30

Asp Asp Ala Thr Ala Tyr Asp Asp Phe Tyr Gln Thr Ile Gly Ala Val
            35   40   45

Val Met Gly Ser Gln Thr Tyr Glu Trp Ile Met Ser Asn Ala Pro Asp
    50   55   60

Asp Trp Pro Tyr Gln Asp Val Pro Ala Phe Val Met Ser Asn Arg Asp
65   70   75   80

Leu Ser Ala Pro Ala Asn Leu Asp Ile Thr Phe Leu Arg Gly Asp Ala
            85   90   95

Ser Ala Ile Ala Val Arg Ala Arg Gln Ala Ala Lys Gly Lys Asn Val
            100   105   110

Trp Leu Val Gly Gly Gly Lys Thr Ala Ala Cys Phe Ala Asn Ala Gly
            115   120   125

Glu Leu Gln Gln Leu Phe Ile Thr Thr Ile Pro Thr Phe Ile Gly Thr
    130   135   140

Gly Val Pro Val Leu Pro Val Asp Arg Ala Leu Glu Val Val Leu Arg
145   150   155   160

Glu Gln Arg Thr Leu Gln Ser Gly Ala Met Glu Cys Ile Leu Asp Val
            165   170   175

Lys Lys Ala Asp
            180

<210> 10
<211> 220
<212> PRT
<213> Pseudomonas fluorescens A2-2

<400> 10
Met Ser Asn Val Phe Ser Gly Gly Lys Gly Asn Gly Asn Pro Gly Phe
 1   5   10   15

Val Arg Thr Phe Ser Arg Ile Ala Pro Thr Tyr Glu Glu Lys Tyr Gly
                20   25   30

Thr Lys Leu Ser Gln Ala His Asp Asp Cys Leu Arg Met Leu Ser Arg
            35   40   45

Trp Met Cys Thr Ser Arg Pro Glu Arg Val Leu Asp Ile Gly Cys Gly
     50   55   60

Thr Gly Ala Leu Ile Glu Arg Met Phe Ala Leu Trp Pro Glu Ala Arg
 65   70   75   80

Phe Glu Gly Val Asp Pro Ala Gln Gly Met Val Asp Glu Ala Ala Lys
                85   90   95

Arg Arg Pro Phe Ala Ser Phe Val Lys Gly Val Ala Glu Ala Leu Pro
                100   105   110

Phe Pro Ser Gln Ser Met Asp Leu Val Val Cys Ser Met Ser Phe Gly
            115   120   125

His Trp Ala Asp Lys Ser Val Ser Leu Asn Glu Val Arg Arg Val Leu
    130   135   140

Lys Pro Gln Gly Leu Phe Cys Leu Val Glu Asn Leu Pro Ala Gly Trp
145   150   155   160

Gly Leu Thr Thr Leu Ile Asn Trp Leu Leu Gly Ser Leu Ala Asp Tyr
                165   170   175

Arg Ser Glu His Glu Val Ile Gln Leu Ala Gln Thr Ala Gly Leu Gln
                180   185   190

Ser Met Glu Thr Ser Val Thr Asp Gln His Val Ile Val Ala Thr Phe
                195   200   205

Arg Pro Cys Cys Gly Glu Val Gly Asp His Gly Arg
    210   215   220

<210> 11
<211> 509
<212> PRT
<213> Pseudomonas fluorescens A2-2

<400> 11
Met Val Val Lys Asn Lys Gln Val Leu Val Val Gly Ala Gly Pro Val
 1   5   10   15

Gly Leu Ala Val Ala Ala Ala Leu Ala Glu Leu Gly Ile Ala Val Asp

```
                            20                    25                    30
Leu Ile Asp Lys Arg Pro Ala Ala Ser Pro His Ser Arg Ala Phe Gly
        35                    40                    45

Leu Glu Pro Val Thr Leu Glu Leu Leu Asn Ala Trp Gly Val Ala Asp
    50                    55                    60

Glu Met Ile Arg Arg Gly Ile Val Trp Ala Ser Ala Pro Leu Gly Asp
65                    70                    75                    80

Lys Ala Gly Arg Thr Leu Ser Phe Ser Lys Leu Pro Cys Glu Tyr Pro
                85                    90                    95

His Met Val Ile Ile Pro Gln Ser Gln Thr Glu Ser Val Leu Thr Asp
                100                   105                   110

Trp Val Asn Arg Lys Gly Val Asn Leu Lys Arg Gly Tyr Ala Leu Lys
        115                   120                   125

Ala Leu Asp Ala Gly Asp Leu His Val Glu Val Thr Leu Glu His Ser
    130                   135                   140

Glu Thr Gly Ser Val Gln Gln Ser Arg Tyr Asp Trp Val Leu Gly Ala
145                   150                   155                   160

Asp Gly Val Asn Ser Ser Val Arg Gln Leu Leu Asn Ile Ser Phe Val
                165                   170                   175

Gly Gln Asp Tyr Lys His Ser Leu Val Val Ala Asp Val Val Leu Arg
                180                   185                   190

Asn Pro Pro Ser Pro Ala Val His Ala Arg Ser Val Ser Arg Gly Leu
        195                   200                   205

Val Ala Leu Phe Pro Leu Pro Asp Gly Ser Tyr Arg Val Ser Ile Glu
    210                   215                   220

Asp Asn Glu Arg Met Asp Thr Pro Val Lys Gln Pro Val Thr His Glu
225                   230                   235                   240

Glu Ile Ala Gly Gly Met Lys Asp Ile Leu Gly Thr Asp Phe Gly Leu
                245                   250                   255

Ala Gln Val Leu Trp Ser Ala Arg Tyr Arg Ser Gln Gln Arg Leu Ala
                260                   265                   270

Thr His Tyr Arg Gln Gly Arg Val Phe Leu Leu Gly Asp Ala Ala His
        275                   280                   285

Thr His Val Pro Ala Gly Gly Gln Gly Leu Gln Met Gly Ile Gly Asp
    290                   295                   300

Ala Ala Asn Leu Ala Trp Lys Leu Ala Gly Val Ile Gln Ala Thr Leu
305                   310                   315                   320

Pro Met Asp Leu Leu Glu Ser Tyr Glu Ala Glu Arg Arg Pro Ile Ala
                325                   330                   335

Ala Ala Ala Leu Arg Asn Thr Asp Leu Leu Phe Arg Phe Asn Thr Ala
        340                   345                   350

Ser Gly Pro Ile Gly Arg Leu Ile His Trp Ile Gly Leu Gln Ala Thr
```

```
                355                      360                      365
Arg Ala Pro Tyr Val Ala Gln Lys Val Val Ser Ala Leu Ala Gly Glu
    370                  375                  380

Gly Val Arg Tyr Asp Ser Val Arg Arg Arg Gly Asp His Arg Leu Val
385                  390                  395                  400

Gly Arg Arg Leu Pro Leu Leu Ser Leu Leu Pro Glu Gly Glu Arg Leu
                405                  410                  415

Pro Arg Gln Ser Leu Thr Gln Leu Leu Arg Ala Gly Arg Phe Val Leu
                420                  425                  430

Val His His Arg Ala Lys Ala Leu Ala Ala Asp Leu Arg Arg Asp Phe
                435                  440                  445

Pro Gly Leu Gln Thr Ala Ser Ile Cys Glu Asp Ser His Asn Asn Ser
    450                  455                  460

Leu Ser Ala Gly Glu Gly Val Ile Val Arg Pro Asp Gly Val Val Ile
465                  470                  475                  480

Trp Val Gly Lys Lys Ser Thr Leu Ala Lys Glu Arg Leu Gly Glu Trp
                485                  490                  495

Leu Leu Asp Asp Ser Lys Ser Ala Arg Gln Ser Leu Thr
                500                  505


<210> 12
<211> 348
<212> PRT
<213> Pseudomonas fluorescens A2-2

<400> 12
Met Ala His Tyr Asp Ser Val Gly Thr Ala Pro Gly Ala Ser Asp Asp
  1               5                  10                  15

Gly Met Ala Val Ala Ser Ile Leu Gln Leu Met Arg Glu Thr Ile Thr
                20                  25                  30

Arg Ser Asp Ala Lys Asn Asn Val Val Phe Leu Leu Ala Asp Gly Glu
            35                  40                  45

Glu Leu Gly Leu Leu Gly Ala Glu His Tyr Val Ser Gln Leu Ser Thr
        50                  55                  60

Pro Glu Arg Glu Ala Ile Arg Leu Val Leu Asn Phe Glu Ala Arg Gly
 65                  70                  75                  80

Asn Gln Gly Ile Pro Leu Leu Phe Glu Thr Ser Gln Lys Asp Tyr Ala
                85                  90                  95

Leu Ile Arg Thr Val Asn Ala Gly Val Arg Asp Ile Ile Ser Phe Ser
                100                 105                 110

Phe Thr Pro Leu Ile Tyr Asn Met Leu Gln Asn Asp Thr Asp Phe Thr
                115                 120                 125

Val Phe Arg Lys Lys Asn Ile Ala Gly Leu Asn Phe Ala Val Val Glu
    130                 135                 140
```

Gly Phe Gln His Tyr His His Met Ser Asp Thr Val Glu Asn Leu Gly
145   150   155   160

Pro Glu Thr Leu Phe Arg Tyr Gln Lys Thr Val Arg Glu Val Gly Asn
                165   170   175

His Phe Ile Gln Gly Ile Asp Leu Ser Ser Leu Ser Ala Asp Glu Asp
            180   185   190

Ala Thr Tyr Phe Pro Leu Pro Gly Gly Thr Leu Leu Val Leu Asn Leu
        195   200   205

Pro Thr Leu Tyr Ala Leu Gly Met Gly Ser Phe Val Leu Cys Gly Leu
    210   215   220

Trp Ala Gln Arg Cys Arg Thr Arg Arg Gln His Gln Gly Lys Asn Cys
225   230   235   240

Val Leu Arg Pro Met Ala Ile Ala Leu Leu Gly Ile Ala Cys Ala Ala
                245   250   255

Leu Val Phe Tyr Val Pro Ser Ile Ala Tyr Leu Phe Val Ile Pro Ser
            260   265   270

Leu Leu Leu Ala Cys Ala Met Leu Ser Arg Ser Leu Phe Ile Ser Tyr
            275   280   285

Ser Ile Met Leu Leu Gly Ala Tyr Ala Cys Gly Ile Leu Tyr Ala Pro
    290   295   300

Ile Val Tyr Leu Ile Ser Ser Gly Leu Lys Met Pro Phe Ile Ala Gly
305   310   315   320

Val Ile Ala Leu Leu Pro Leu Cys Leu Leu Ala Val Gly Leu Ala Gly
            325   330   335

Val Ile Ala Arg Ser Arg Asp Cys Arg Thr Cys Asp
            340   345

<210> 13
<211> 572
<212> PRT
<213> Pseudomonas fluorescens A2-2

<400> 13
Met Arg Ser Leu Lys Ile Ile Val Leu Ala Ser Ala Phe Asn Gly Leu
  1   5   10   15

Thr Gln Arg Ala Trp Leu Asp Leu Arg Gln Ser Gly His Ala Pro Ser
            20   25   30

Val Val Leu Phe Thr Asp Pro Ala Leu Val Cys Gln Gln Ile Glu Asp
        35   40   45

Ser Asp Ala Asp Leu Val Ile Cys Pro Phe Leu Lys Asp Arg Val Pro
    50   55   60

Gln Gln Leu Trp Ser Asn Leu Glu Arg Pro Val Val Ile Ile His Pro
65   70   75   80

Gly Ile Val Gly Asp Arg Gly Ala Ser Ala Leu Asp Trp Ala Ile Ser
            85   90   95
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Gln Gln Val Gly Arg Trp Gly Val Thr Ala Leu Gln Ala Val Glu Glu
            100   105   110

Met Asp Ala Gly Pro Ile Trp Ser Thr Cys Glu Phe Asp Met Pro Ala
            115   120   125

Asp Val Arg Lys Ser Glu Leu Tyr Asn Gly Ala Val Ser Asp Ala Ala
    130   135   140

Leu Tyr Cys Ile Arg Asp Val Val Glu Lys Phe Ala Arg Val Phe Val
145   150   155   160

Pro Val Pro Leu Asp Tyr Thr Gln Ala His Val Ile Gly Arg Leu Gln
            165   170   175

Pro Asn Met Thr Gln Ala Asp Arg Thr Phe Ser Trp Tyr Asp Cys Ala
            180   185   190

Arg Phe Ile Lys Arg Cys Ile Asp Ala Ala Asp Gly Gln Pro Gly Val
            195   200   205

Leu Ala Ser Ile Gln Gly Gly Gln Tyr Tyr Leu Tyr Asp Ala His Leu
    210   215   220

Asp Ala Arg His Gly Thr Pro Gly Glu Ile Leu Ala Val Gln Asp Asp
225   230   235   240

Ala Val Leu Val Ala Ala Gly Asp Gln Ser Leu Trp Ile Gly Ser Leu
            245   250   255

Lys Arg Lys Ala Arg Pro Gly Glu Glu Thr Phe Lys Leu Pro Ala Arg
            260   265   270

His Val Leu Ala Glu Ala Leu Ala Asp Ile Pro Val Leu Asp Ser Ser
            275   280   285

Ile Ala Asn Gln Met Phe Asp Glu Gln Ala Tyr Gln Pro Ile Arg Tyr
    290   295   300

Arg Glu Ala Gly His Val Gly Glu Leu Thr Phe Glu Phe Tyr Asn Gly
305   310   315   320

Ala Met Ser Thr Glu Gln Cys Gln Arg Leu Val Ala Ala Leu Arg Trp
            325   330   335

Ala Lys Thr Arg Asp Thr Gln Val Leu Val Ile Lys Gly Gly Arg Gly
            340   345   350

Ser Phe Ser Asn Gly Val His Leu Asn Val Ile Gln Ala Ala Pro Val
            355   360   365

Pro Gly Leu Glu Ala Trp Ala Asn Ile Gln Ala Ile Tyr Asp Val Cys
    370   375   380

His Glu Leu Leu Thr Ala Arg Gln Leu Val Ile Ser Gly Leu Thr Gly
385   390   395   400

Ser Ala Gly Ala Gly Gly Val Met Leu Ala Leu Ala Ala Asp Ile Val
            405   410   415

Leu Ala Arg Glu Ser Val Val Leu Asn Pro His Tyr Lys Thr Met Gly

```
                      420                  425                  430
```

Leu Tyr Gly Ser Glu Tyr Trp Thr Tyr Ser Leu Pro Arg Ala Val Gly
        435   440   445

Ser Glu Val Ala His Gln Leu Thr Asp Ala Cys Leu Pro Ile Ser Ala
    450   455   460

Leu Gln Ala Glu Gln Tyr Gly Leu Val Gln Gly Ile Gly Pro Arg Cys
465   470   475   480

Pro His Ala Phe Ser Arg Trp Leu Met Gln Gln Ala Ser Ser Ala Leu
                485   490   495

Thr Asp Glu Lys Tyr Ala Val Ala Arg Ala Arg Lys Ala Ala Leu Asp
            500   505   510

Ile Asp Gln Ile Thr Arg Cys Arg Glu Ala Glu Leu Ala Gln Met Gln
        515   520   525

Leu Asp Met Val His Asn Arg His Gln Phe Ala Glu Lys Cys Arg Asn
    530   535   540

Phe Val Leu Lys Arg Lys Thr Cys Gln Thr Pro Gln Arg Leu Met Ala
545   550   555   560

Pro Trp Ala Val Ala Arg Glu Ala Ala Leu Val Gly
                565   570


```
<210> 14
<211> 230
<212> PRT
<213> Pseudomonas fluorescens A2-2

<400> 14
```
Met Ile Gly Ile Val Ile Pro Ala His Asn Glu Glu Arg His Ile Ser
  1   5   10   15

Ala Cys Leu Ala Ser Ile Gln Arg Ala Ile Ala His Pro Ala Leu Ala
            20   25   30

His Gln Gln Val Gln Leu Leu Val Val Leu Asp Ala Cys Ser Asp Glu
        35   40   45

Thr Ala Thr Arg Val Ser Ala Met Gly Val Ala Thr Leu Glu Val Ser
    50   55   60

Val Arg Asn Val Gly Lys Ala Arg Ala Leu Gly Ala Glu Arg Leu Leu
65   70   75   80

Glu Val Gly Ala Gln Trp Leu Ala Phe Thr Asp Ala Asp Thr Val Val
                85   90   95

Pro Ala Asp Trp Leu Val Arg Gln Ile Gly Phe Gly Ala Asp Ala Val
            100   105   110

Cys Gly Thr Val Glu Val Asp Ser Trp Ser Glu Tyr Gly Glu Ser Val
        115   120   125

Arg Ser Arg Tyr Leu Glu Leu Tyr Gln Phe Thr Glu Asn His Arg His
    130   135   140

```
Ile His Gly Ala Asn Leu Gly Leu Ser Ala Asp Ala Tyr Arg Asn Ala
145             150             155             160

Gly Gly Phe Gln His Leu Val Ala His Glu Asp Val Gln Leu Val Ala
                165             170             175

Asp Leu Glu Arg Ile Gly Ala Arg Ile Val Trp Thr Ala Thr Asn Pro
            180             185             190

Val Val Thr Ser Ala Arg Arg Asp Tyr Lys Cys Arg Gly Gly Phe Gly
            195             200             205

Glu Tyr Leu Ala Ser Leu Val Ala Glu Gly Thr Arg Glu His Ser Pro
    210             215             220

Ala His Ala Pro Ile Gly
225             230
```

<210> 15
<211> 348
<212> PRT
<213> Pseudomonas fluorescens A2-2

<400> 15

```
Met His Pro His Lys Thr Ala Ile Val Leu Ile Glu Tyr Gln Asn Asp
  1             5               10              15

Phe Thr Thr Pro Gly Gly Val Phe His Asp Ala Val Lys Asp Val Met
            20              25              30

Gln Thr Ser Asn Met Leu Ala Asn Thr Ala Thr Thr Ile Glu Gln Ala
        35              40              45

Arg Lys Leu Gly Val Lys Ile Ile His Leu Pro Ile Arg Phe Ala Asp
    50              55              60

Gly Tyr Pro Glu Leu Thr Leu Arg Ser Tyr Gly Ile Leu Lys Gly Val
65              70              75              80

Ala Asp Gly Ser Ala Phe Arg Ala Gly Ser Trp Gly Ala Glu Ile Thr
            85              90              95

Asp Ala Leu Lys Arg Asp Pro Thr Asp Ile Val Ile Glu Gly Lys Arg
            100             105             110

Gly Leu Asp Ala Phe Ala Thr Thr Gly Leu Asp Leu Val Leu Arg Asn
        115             120             125

Asn Gly Ile Gln Asn Leu Val Val Ala Gly Phe Leu Thr Asn Cys Cys
    130             135             140

Val Glu Gly Thr Val Arg Ser Gly Tyr Glu Lys Gly Tyr Asp Val Val
145             150             155             160

Thr Leu Thr Asp Cys Thr Ala Thr Phe Ser Asp Glu Gln Gln Arg Ala
            165             170             175

Ala Glu Gln Phe Thr Leu Pro Met Phe Phe Ala Asn Pro Ala Thr His
        180             185             190

Arg Val Ser Ala Ser Thr Glu Arg Arg Ile Lys Lys Ala Ala Thr Pro
    195             200             205
```

```
Ala Glu Ser Pro Leu Phe Cys Leu Gly His Ser Val Gly Ala Tyr Cys
    210             215             220

Ile Ser Pro Phe Pro Asn Asp Gln Ser Ser Arg Phe Thr Ser Thr Arg
225             230             235                 240

Leu Ile His Thr Ser Ser Leu Arg Ser Pro Val Leu Ala Trp Met Pro
                245             250                 255

Ser Ala Met Asn Leu Lys Ala Phe Phe Thr Ser Met Leu Arg Pro Ala
            260             265             270

Phe His Val Thr Trp Ile Asn Thr Ile Leu Gly Val Val Thr Pro Arg
        275             280             285

Tyr Pro Ala Ala Gly Thr Ser Ser Ser Leu Ala Trp Arg Leu Met Ile
    290             295             300

Trp Asn Leu Ser Cys Ser Gly Thr Leu Ala Thr Leu Val Ile Ala Ala
305             310             315             320

Tyr Thr Thr Ser Pro Met Ala Val Ala Val Ser Val Glu Val Ser Ala
            325             330             335

Ala Arg Ser Ile Arg Thr Lys Gly Met Asp Lys Ser
            340             345
```

<210> 16
<211> 5
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: Illustrative core
      peptide

<400> 16
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Leu Lys Ala Gly Ala
  1               5
```

<210> 17
<211> 10
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: Illustrative core
      peptide

<220>
<221> MOD_RES
<222> (4)
<223> Ser or Thr

<220>
<221> MOD_RES
<222> (7)
<223> Variable amino acid

<400> 17

Ser Gly Thr Xaa Thr Gly Xaa Pro Lys Gly
 1   5   10

<210> 18
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: Illustrative core
      peptide

<220>
<221> MOD_RES
<222> (5)
<223> Variable amino acid

<400> 18
Lys Ile Arg Gly Xaa Arg Ile Glu Leu
 1   5

<210> 19
<211> 5
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: Illustrative core
      peptide

<220>
<221> MOD_RES
<222> (4)
<223> Variable amino acid

<400> 19
Leu Gly Gly Xaa Ser
 1   5

<210> 20
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      primer

<220>
<221> modified_base
<222> (6)
<223> a, c, t, g, unknown or other

<220>
<221> modified_base
<222> (9)
<223> a, c, t, g, unknown or other

<220>
<221> modified_base

<222> (12)
<223> a, c, t, g, unknown or other

<400> 20
tayggnccna cnga   14

<210> 21
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      primer

<220>
<221> modified_base
<222> (3)
<223> a, c, t, g, unknown or other

<220>
<221> modified_base
<222> (6)
<223> a, c, t, g, unknown or other

<220>
<221> modified_base
<222> (9)
<223> a, c, t, g, unknown or other

<220>
<221> modified_base
<222> (12)
<223> a, c, t, g, unknown or other

<400> 21
tsnccnccna dntcraaraa   20

<210> 22
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 22
cgtctagaca ccggcttcat gg   22

<210> 23
<211> 26
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 23
ggtctagata acagccaaca aacata   26

<210> 24
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 24
catctagacc ggactgatat tcg   23

<210> 25
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 25
ggtctagata acagccaaca aacata   26

<210> 26
<211> 6
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: Illustrative core
      peptide

<400> 26
Leu Lys Ala Gly Gly Ala
 1   5

<210> 27
<211> 5
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: Illustrative core
      peptide

<400> 27
Ser Gly Thr Thr Gly
 1   5

<210> 28
<211> 7
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: Illustrative core
      peptide

<400> 28
Gly Glu Leu Cys Ile Gly Gly
  1   5

<210> 29
<211> 8
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: Illustrative core
      peptide

<400> 29
Arg Ile Glu Leu Gly Glu Ile Glu
  1   5

<210> 30
<211> 5
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: Illustrative core
      peptide

<400> 30
Leu Gly Gly His Ser
  1   5

<210> 31
<211> 578
<212> PRT
<213> Myxococcus xanthus

<220>
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<221> MOD_RES
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<223> Variable amino acid

<400> 31
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 1   5   10   15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                20   25   30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                35   40   45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     50   55   60

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 65   70   75   80

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Thr Ser Gly Ser Thr
                85   90   95

Ala Asp Pro Lys Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                100   105   110

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                115   120   125

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     130   135   140

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
145   150   155   160

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                165   170   175

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                180   185   190

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                195   200   205

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     210   215   220

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
225   230   235   240

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                245   250   255

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                260   265   270

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     275   280   285

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     290   295   300

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa

305   310   315   320

Xaa Gly Glu Ile Trp Val Arg Gly Pro Ser Val Ala Gln Gly Tyr Xaa
                325   330   335

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                340   345   350

Xaa Xaa Xaa Xaa Xaa Xaa Leu Arg Thr Gly Asp Leu Xaa Xaa Xaa Xaa
                355   360   365

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                370   375   380

Xaa Xaa Xaa Asn Tyr Tyr Pro Gln Asp Leu Glu Leu Xaa Xaa Xaa Xaa
385   390   395   400

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                405   410   415

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                420   425   430

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                435   440   445

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                450   455   460

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
465   470   475   480

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                485   490   495

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                500   505   510

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                515   520   525

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                530   535   540

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu
545   550   555   560

Pro Asp Leu Gly Leu Asp Ser Leu Ala Leu Val Glu Leu Lys His Arg
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Ile Glu

<210> 32
<211> 475
<212> PRT
<213> Myxococcus xanthus

<220>
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<223> Variable amino acid

<220>
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<222> (274)..(297)
<223> Variable amino acid

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<222> (336)..(456)
<223> Variable amino acid

<400> 32
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 1               5                  10                  15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
             20                  25                  30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         35                  40                  45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     50                  55                  60

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Thr Ser Gly
 65                  70                  75                  80

Ser Thr Gly Gln Pro Lys Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                 85                  90                  95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
             100                 105                 110

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         115                 120                 125

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     130                 135                 140

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
145                 150                 155                 160

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
             165                 170                 175

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         180                 185                 190

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     195                 200                 205

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     210                 215                 220
```

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Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
225             230             235             240

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            245             250             255

Xaa Xaa Xaa Gly Glu Leu Phe Ile Gly Gly Ala Gly Val Ala Arg Gly
            260             265             270

Tyr Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            275             280             285

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Arg Thr Gly Asp Leu Xaa
    290             295             300

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
305             310             315             320

Xaa Xaa Xaa Xaa Xaa Xaa Phe Arg Ile Glu Phe Glu Glu Ile Glu Xaa
            325             330             335

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            340             345             350

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    355             360             365

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    370             375             380

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
385             390             395             400

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            405             410             415

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            420             425             430

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    435             440             445

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Phe Phe Asp Leu Gly Gly Asn Ser
    450             455             460

Leu Leu Ala Thr Arg Leu Ala Thr Arg Leu Ala
465             470             475
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<210> 33
<211> 476
<212> PRT
<213> Myxococcus xanthus

<220>
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<222> (337)..(457)
<223> Variable amino acid

<400> 33
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Leu Lys Ala Gly Gly Ala Tyr Val Pro Leu Asp Pro Xaa Xaa Xaa Xaa
 1               5                  10                  15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        35                  40                  45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     50                  55                  60

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Thr Ser Gly
 65                  70                  75                  80

Ser Ser Gly Arg Pro Lys Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                85                  90                  95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            100                 105                 110

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        115                 120                 125

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     130                 135                 140

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
145                 150                 155                 160

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                165                 170                 175

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            180                 185                 190

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        195                 200                 205

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     210                 215                 220

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
225                 230                 235                 240
```

```
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa     Xaa
                245                 250                 255

Xaa Xaa Xaa Xaa Gly Glu Leu Phe Ile Gly Gly Ser Gly Val Ala Arg
            260                 265             270

Gly Tyr Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        275                 280                 285

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Arg Thr Gly Asp Leu
    290                 295                 300

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
305                 310                 315                 320

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Arg Ile Glu Leu Ala Glu Ile Glu
                325                 330                 335

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            340                 345                 350

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        355                 360                 365

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    370                 375                 380

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
385                 390                 395                 400

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            405                 410                 415

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        420                 425                 430

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    435                 440                 445

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Phe Phe Glu Leu Gly Gly Asn
    450                 455                 460

Ser Leu Leu Ala Gly Arg Leu Val Glu Glu Leu Asp
465                 470                 475
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<210> 34
<211> 486
<212> PRT
<213> Myxococcus xanthus

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<222> (284)..(307)
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<223> Variable amino acid

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Leu Lys Ala Gly Gly Ala Tyr Val Pro Leu Asp Pro Xaa Xaa Xaa Xaa
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Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        35                  40                  45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    50                  55                  60

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr
 65                  70                  75                  80

Thr Ser Gly Ser Thr Gly Thr Pro Lys Ala Xaa Xaa Xaa Xaa Xaa Xaa
                85                  90                  95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            100                 105                 110

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        115                 120                 125

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    130                 135                 140

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
145                 150                 155                 160

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                165                 170                 175

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            180                 185                 190

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        195                 200                 205

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    210                 215                 220

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
225                 230                 235                 240

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                245                 250                 255

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Glu Leu
```

                260   265   270

Phe Val Gly Gly Val Gly Leu Ala Arg Gly Tyr Xaa Xaa Xaa Xaa Xaa
        275   280   285

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    290   295   300

Xaa Xaa Xaa Tyr Arg Thr Gly Asp Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa
305   310   315   320

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        325   330   335

Tyr Arg Val Glu Leu Gly Glu Ile Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        340   345   350

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    355   360   365

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    370   375   380

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
385   390   395   400

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        405   410   415

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        420   425   430

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        435   440   445

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
    450   455   460

Xaa Xaa Xaa Phe Phe Glu Val Gly Gly Thr Ser Leu Leu Leu Ala Arg
465   470   475   480

Leu Ala Ser Arg Leu Leu
                485

<210> 35
<211> 5
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: A5 core
      peptide

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  1   5